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Mr. Gregory Rudloff  
United States Environmental Protection Agency  
Region 5  
77 W. Jackson Blvd. LU-9J  
Chicago, IL 60604

April 19, 2018

Subject: Interim Measures Action Summary Letter for The Dow Chemical Company, Hanging Rock Plant, Ironton, OH EPA ID# OHR 000 157 727 and OHD 039 128 913

Dear Mr. Rudloff,

On behalf of Mr. Timothy King of The Dow Chemical Company (Dow), CH2M is submitting this summary letter to document the short-term interim measures completed in Building 505 at the Dow Hanging Rock Plant in Ironton, Ohio.

During the United States Environmental Protection Agency's (USEPA) review of the Additional Phase 3 Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Work Plan (Phase 3 Work Plan; CH2M 2018a), USEPA requested immediate interim measures be taken to protect plant workers using Building 505 from volatile organic compound (VOC) exposures, specifically tetrachloroethene (PCE). Elevated PCE indoor air concentrations were observed, although a potential indoor source was suspected. On March 16, 2018, USEPA provided technical comments on the Phase 3 Work Plan and requested short-term interim measures (i.e., air filtration, adjusting ventilation, alerting people inside the building to risk) be taken at Building 505.

On March 20, 2018, Dow submitted the Dow Hanging Rock Facility Potential Vapor Intrusion Interim Measures Action Plan (IM Action Plan; CH2M 2018b) to USEPA. The IM Action Plan detailed measures to be conducted, performance monitoring objectives, plan, and schedule, continued communications discussion, and long-term protectiveness next steps.

## Interim Measures Completed

The IM measures completed follow the IM Action Plan and are discussed below and documented in photographs included in Attachment 1.

Between March 22 and April 5, 2018, the following actions were completed:

- Relocated the Building 505 office worker to a temporary work space trailer placed in the Building 505 parking lot.
- Placed a notice on the building outside doors that include the following statements:  
“...tetrachloroethylene (PCE) has been detected in indoor air at a concentration above USEPA's indoor air criteria. Entry into this building is restricted to only those personnel approved by the Site Leader.” Photographs of the notice are included in Attachment 1.

- Performed a visual building survey that identified three potential vapor entry pathways: A crack in the slab in the southwest corner storage room and in an interior electronic parts storage room, and a gap around the fire water riser pipe, a 6-inch-diameter pipe that comes through the floor.

These were sealed on April 4, 2018, using the high-performance polyurethane sealant Sikaflex®-1C SL. Plumbers putty and a plastic o-ring were used to fill the gap around the fire water pipe before the sealant was applied. Photographs of the cracks/gaps before and after sealing are included in Attachment 1.

- Identified storage and use inside the building of several products containing site-related VOCs PCE and trichloroethene (TCE) as the first ingredient. Photographs of the products and their two storage locations are included in Attachment 1.

Two of these products, CRC Heavy Duty Degreaser (contains PCE and TCE) and Share Corporation Non-Flammable Safety Solvent (contains TCE) are stored and used in the interior electronic parts storage room to clean equipment. A partially used Share Corporation Non-Flammable Safety Solvent aerosol can was found with the extension spray-tube attached. A ppbRAE 3000 photoionization detector (PID) placed near the end of the extension tube measured elevated VOC levels at around 300 parts per billion (ppb). Dow requested that these products be removed from this interior room and not be used inside the building.

More products were found in the large storage area on the east side of the building. This area included various equipment, parts, chemicals, etc. Aerosol cans, apparently unused, were stored here without the spray tube attached.

- Performed an indoor air VOC survey using the HAPSITE Gas Chromatograph/Mass Spectrometer (HAPSITE) to identify potential indoor background sources, gain an understanding of the indoor air concentrations' spatial variability, and identify potential vapor entry points. HAPSITE data are provided in Table 1. Results are discussed in the summary section below. Photographs are included in Attachment 1.
- Performed a visual survey of the heating, ventilation, and air conditioning (HVAC) system. Results are discussed in the summary section below. Photographs are included in Attachment 1.
- Placed two air purifying units (APUs) in rooms with the sealed cracks and where potential indoor sources (open and used aerosol cans) were identified – the southwest corner storage room and the interior electronic parts storage room. The APUs are Airpura C600 Air Purifiers for Chemical Removal that include a 26-pound activated carbon pre-filter. Photographs of the units inside the rooms are included in Attachment 1.

## Building Survey and HAPSITE Survey Summary

Building 505 is split up into three main sections:

- The western addition, which contains offices or storage rooms around the exterior and interior offices and a conference room
- The original central structure, which contains exterior offices, storage areas, and a conference room and interior offices, storage areas, lunchroom, and bathrooms
- The eastern addition, which includes two large storeroom areas that have shelving units throughout one side and larger equipment/chemical storage on the other side. Garage doors are located on the north and south ends of the storeroom. Offices, a small storage room, a kitchen, and a bathroom are located in the southeast corner.

Occupied building use mainly occurred in the central and eastern sections. The central and western sections have a suspended ceiling and a combined attic space. One central interior electronic parts storage room has a raised floor with removable tiles suspended approximately 1 foot above the slab. The eastern storeroom area has an open ceiling to the roofline and is separated from the central section by drywall and insulation.

### HVAC Survey Summary

The HVAC survey identified multiple split-system air-source heat pump units providing air conditioning to the middle offices/rooms inside the western and central sections of Building 505. Most perimeter offices/rooms have individual through-wall air conditioning units that heat, cool, and recirculate air in the rooms. The storeroom area in the eastern section has a roof vent and garage doors, with heating units suspended from the ceiling structure.

The interior split-system indoor air handling units are suspended from the roof structure and are in an open attic space above the suspended ceilings. Photos in Attachment 1 show how the air handling systems share a common attic space and a continuous ridge vent at the roof center. The ridge vent dampers were usually closed in the above ceiling areas, but normal infiltration and leakage maintain some attic ventilation.

Overall, adjustment of the HVAC system would mainly affect the interior rooms (conference room, lunchroom, restrooms, storage areas, unoccupied offices, etc.) within the western and central building sections. The units in each exterior room only recirculate the air. Air ventilates and mixes within the entire attic space above the western and central sections and, to a lesser extent, with the eastern storeroom area.

Adjustments to the HVAC system were not made and will be further evaluated after reviewing the indoor air analytical data and discussions with AmSty.

### HAPSITE Survey Summary

The HAPSITE provides short-duration/high-resolution measurements of VOCs in air. The HAPSITE was placed on a cart and used to take measurements from room air to sample the breathing zone typical for an office worker (generally, 3 to 6 feet above ground surface). The HAPSITE was calibrated for PCE, TCE, 1,1-dichloroethene (DCE), trans-1,2-DCE, cis-1,2-DCE, and vinyl chloride. HAPSITE reporting limits were below the USEPA vapor intrusion screening levels (VISLs) and Ohio EPA commercial indoor air accelerated response action levels (Ohio EPA 2016). The breathing-zone indoor air detections in the short-duration HAPSITE samples were below these screening and action levels. The HAPSITE breathing zone results are presented in the Table 1.

Breathing-zone indoor air samples were collected from 15 locations throughout the building as well as one outdoor location. The elevated PCE concentrations found in the 8-hour air canister samples collected in September 2017 were not observed in the HAPSITE samples collected in March 2018.

Results for PCE in indoor air were relatively uniform throughout the building and ranged from 1.4 to 10 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), with the highest concentration detected in the interior computer parts storage room near the open aerosol cans (Attachment 1, Photograph 37). TCE was only detected in the interior electronic parts storage room ( $6.5 \mu\text{g}/\text{m}^3$ ) near the aerosol cans and a small exterior room containing the fire water riser pipe before the gap was sealed ( $1.4 \mu\text{g}/\text{m}^3$ ) (Table 1). As noted above, at least one aerosol can containing TCE appeared to have been used based on the ppbRAE 3000 PID readings of the spray extension tube.

The ppbRAE 3000 PID was then used to identify potential locations where VOCs may enter the building through the slab. Multiple locations were checked, including floor drains in the east storeroom area,

under sinks, near aerosol cans, the breathing zone in offices, conference rooms, storage areas, etc. The following areas had PID readings between 30 and 600 ppb: The crack in the slab in the southwest corner storage room (around 400 ppb), the crack in the interior electronic parts storage room (approximately 30 ppb), the gap around the fire water riser pipe (around 600 ppb), and at the sprayer end of an open aerosol can (approximately 300 ppb).

The two floor cracks were also sampled with the HAPSITE. Samples collected from both cracks (PP-1 and PP-2) showed elevated concentrations of PCE (1,800 and 770  $\mu\text{g}/\text{m}^3$ , respectively) and TCE (140 and 5.6  $\mu\text{g}/\text{m}^3$ , respectively), which suggests that these serve as potential vapor entry points. The air in the enclosed space between the slab and the elevated floor in interior electronic parts storage room (i.e., approximately a foot above the cracks) was also sampled (PP-2). PCE and TCE concentrations (130 and 5.6  $\mu\text{g}/\text{m}^3$ , respectively) in this space were detected.

## Overall Findings Summary

Observations made and data collected during the building survey identified several potential VOC sources/pathways.

Potential building use sources:

- Used aerosol spray cans containing TCE and PCE found in a central interior electronic parts storage room
- Storage of aerosol spray cans containing TCE and PCE in the eastern storeroom

Potential VOC pathways into the building:

- Crack in the slab in the southwest corner storage room
- Crack in the slab under the raised floor in the central interior electronic parts storage room
- Gap in the slab around the fire water pipe riser located in a small exterior room

As discussed previously, actions have been taken to mitigate these sources. The cracks/gap have been sealed, the aerosol spray cans have been removed from the central interior electronic parts storage room, and APUs have been placed. The aerosol cans containing PCE and TCE remained in the eastern storage area; however, these products have likely not been used, which would minimize the amount of PCE and TCE off-gassing.

Air ventilates and mixes within the entire attic space above the suspended ceiling in the western and central building sections and, to a lesser extent, with the eastern storeroom area. Several heat pump HVAC systems heat, cool, and exchange air the interior rooms (conference room, lunchroom, restrooms, storage areas, unoccupied offices, etc.) within the western and central building sections. Individual wall units only recirculate the air in the exterior rooms. Adjustments may be made to the HVAC system at a later date.

## Interim Measures Performance Monitoring Update

The first Indoor air sampling was conducted on April 12, 2018, within 10 days of the interim measures being completed on April 5, 2018. Six indoor air samples, one duplicate, and one outside/ambient air sample were collected. Four of the six indoor air samples were collected from previous sampling locations. The other two samples were collected in the rooms where the cracks were sealed and APUs were placed.

The canisters were shipped to Alpha Analytical located in Mansfield, Massachusetts, and analyzed for PCE, TCE, 1,1-DCE, trans-1,2-DCE, cis-1,2-DCE, and vinyl chloride by USEPA Method TO-15. Dow

requested a 7-day turnaround time for the analytical results. Dow will provide the analytical data to USEPA within 5 business days of receiving the results, which will be by April 30, 2018.

## Performance Monitoring Schedule

The monitoring schedule provides for two sampling events within the first 30 days and continues monitoring during the seasonal peaks of summer and winter to monitor the effects of HVAC use and seasonal operation changes. The interim measures performance monitoring schedule is provided in Table 2.

The 1-month post-sampling event will be conducted the week of April 30, 2018.

Please contact me at (513) 673-2201 or Mr. King at (304) 747-3763 should you have any questions or comments.

Sincerely,

CH2M



Marie W. Chiller  
Site Manager

Attachments

cc: Timothy King/The Dow Chemical Company

# Tables

Table 1. HAPSITE Analytical Results for Building 505

Hanging Rock Facility, Ironton, Ohio

| Sample Name | Sample Location  | Sample Type | Breathing Zone? | Date/Time Sampled | Compound       | Reporting Limit ( $\mu\text{g}/\text{m}^3$ ) | Result ( $\mu\text{g}/\text{m}^3$ ) |
|-------------|--|-------------|-----------------|-------------------|----------------|--|-------------------------------------|
| IA-1        | Central exterior conference room                       | IA          | Yes             | 3/22/2018 3:34    | Vinyl Chloride | 1.3  | 1.3 U                               |
| IA-1        | Central exterior conference room                       | IA          | Yes             | 3/22/2018 3:34    | 1,1-DCE        | 0.4  | 0.4 U                               |
| IA-1        | Central exterior conference room                       | IA          | Yes             | 3/22/2018 3:34    | trans-1,2-DCE  | 0.4  | 0.4 U                               |
| IA-1        | Central exterior conference room                       | IA          | Yes             | 3/22/2018 3:34    | cis-1,2,DCE    | 0.4  | 0.4 U                               |
| IA-1        | Central exterior conference room                       | IA          | Yes             | 3/22/2018 3:34    | TCE            | 0.6  | 0.55 U                              |
| IA-1        | Central exterior conference room                       | IA          | Yes             | 3/22/2018 3:34    | PCE            | 0.7  | <b>2.3</b>                          |
| IA-2        | Southwest corner storage area                          | IA          | Yes             | 3/22/2018 3:45    | Vinyl Chloride | 1.3  | 1.3 U                               |
| IA-2        | Southwest corner storage area                          | IA          | Yes             | 3/22/2018 3:45    | 1,1-DCE        | 0.4  | 0.4 U                               |
| IA-2        | Southwest corner storage area                          | IA          | Yes             | 3/22/2018 3:45    | trans-1,2-DCE  | 0.4  | 0.4 U                               |
| IA-2        | Southwest corner storage area                          | IA          | Yes             | 3/22/2018 3:45    | cis-1,2,DCE    | 0.4  | 0.4 U                               |
| IA-2        | Southwest corner storage area                          | IA          | Yes             | 3/22/2018 3:45    | TCE            | 0.6  | 0.55 U                              |
| IA-2        | Southwest corner storage area                          | IA          | Yes             | 3/22/2018 3:45    | PCE            | 0.7  | <b>1.6</b>                          |
| IA-3        | Southwest office (adjacent room)                       | IA          | Yes             | 3/22/2018 4:14    | Vinyl Chloride | 1.3  | 1.3 U                               |
| IA-3        | Southwest office (adjacent room)                       | IA          | Yes             | 3/22/2018 4:14    | 1,1-DCE        | 0.4  | 0.4 U                               |
| IA-3        | Southwest office (adjacent room)                       | IA          | Yes             | 3/22/2018 4:14    | trans-1,2-DCE  | 0.4  | 0.4 U                               |
| IA-3        | Southwest office (adjacent room)                       | IA          | Yes             | 3/22/2018 4:14    | cis-1,2,DCE    | 0.4  | 0.4 U                               |
| IA-3        | Southwest office (adjacent room)                       | IA          | Yes             | 3/22/2018 4:14    | TCE            | 0.6  | 0.55 U                              |
| IA-3        | Southwest office (adjacent room)                       | IA          | Yes             | 3/22/2018 4:14    | PCE            | 0.7  | <b>2.5</b>                          |
| IA-4        | Women's restroom, contains a shower                    | IA          | Yes             | 3/22/2018 4:22    | Vinyl Chloride | 1.3  | 1.3 U                               |
| IA-4        | Women's restroom, contains a shower                    | IA          | Yes             | 3/22/2018 4:22    | 1,1-DCE        | 0.4  | 0.4 U                               |
| IA-4        | Women's restroom, contains a shower                    | IA          | Yes             | 3/22/2018 4:22    | trans-1,2-DCE  | 0.4  | 0.4 U                               |
| IA-4        | Women's restroom, contains a shower                    | IA          | Yes             | 3/22/2018 4:22    | cis-1,2,DCE    | 0.4  | 0.4 U                               |
| IA-4        | Women's restroom, contains a shower                    | IA          | Yes             | 3/22/2018 4:22    | TCE            | 0.6  | 0.55 U                              |
| IA-4        | Women's restroom, contains a shower                    | IA          | Yes             | 3/22/2018 4:22    | PCE            | 0.7  | <b>1.9</b>                          |
| IA-5        | Central interior computer parts storage room           | IA          | Yes             | 3/22/2018 4:32    | Vinyl Chloride | 1.3  | 1.3 U                               |
| IA-5        | Central interior computer parts storage room           | IA          | Yes             | 3/22/2018 4:32    | 1,1-DCE        | 0.4  | 0.4 U                               |
| IA-5        | Central interior computer parts storage room           | IA          | Yes             | 3/22/2018 4:32    | trans-1,2-DCE  | 0.4  | 0.4 U                               |
| IA-5        | Central interior computer parts storage room           | IA          | Yes             | 3/22/2018 4:32    | cis-1,2,DCE    | 0.4  | 0.4 U                               |
| IA-5        | Central interior computer parts storage room           | IA          | Yes             | 3/22/2018 4:32    | TCE            | 0.6  | <b>6.5</b>                          |
| IA-5        | Central interior computer parts storage room           | IA          | Yes             | 3/22/2018 4:32    | PCE            | 0.7  | <b>10</b>                           |
| IA-6        | Central exterior small room with fire water pipe riser | IA          | Yes             | 3/22/2018 4:51    | Vinyl Chloride | 1.3  | 1.3 U                               |
| IA-6        | Central exterior small room with fire water pipe riser | IA          | Yes             | 3/22/2018 4:51    | 1,1-DCE        | 0.4  | 0.4 U                               |
| IA-6        | Central exterior small room with fire water pipe riser | IA          | Yes             | 3/22/2018 4:51    | trans-1,2-DCE  | 0.4  | 0.4 U                               |
| IA-6        | Central exterior small room with fire water pipe riser | IA          | Yes             | 3/22/2018 4:51    | cis-1,2,DCE    | 0.4  | 0.4 U                               |
| IA-6        | Central exterior small room with fire water pipe riser | IA          | Yes             | 3/22/2018 4:51    | TCE            | 0.6  | <b>1.4</b>                          |
| IA-6        | Central exterior small room with fire water pipe riser | IA          | Yes             | 3/22/2018 4:51    | PCE            | 0.7  | <b>3.2</b>                          |
| IA-7        | Warehouse (SW) by PCE spray cans                       | IA          | Yes             | 3/22/2018 5:00    | Vinyl Chloride | 1.3  | 1.3 U                               |
| IA-7        | Warehouse (SW) by PCE spray cans                       | IA          | Yes             | 3/22/2018 5:00    | 1,1-DCE        | 0.4  | 0.4 U                               |

Table 1. HAPSITE Analytical Results for Building 505

Hanging Rock Facility, Ironton, Ohio

| Sample Name | Sample Location  | Sample Type | Breathing Zone? | Date/Time Sampled | Compound       | Reporting Limit ( $\mu\text{g}/\text{m}^3$ ) | Result ( $\mu\text{g}/\text{m}^3$ ) |
|-------------|--|-------------|-----------------|-------------------|----------------|--|-------------------------------------|
| IA-7        | Warehouse (SW) by PCE spray cans                         | IA          | Yes             | 3/22/2018 5:00    | trans-1,2-DCE  | 0.4  | 0.4 U                               |
| IA-7        | Warehouse (SW) by PCE spray cans                         | IA          | Yes             | 3/22/2018 5:00    | cis-1,2,DCE    | 0.4  | 0.4 U                               |
| IA-7        | Warehouse (SW) by PCE spray cans                         | IA          | Yes             | 3/22/2018 5:00    | TCE            | 0.6  | 0.55 U                              |
| IA-7        | Warehouse (SW) by PCE spray cans                         | IA          | Yes             | 3/22/2018 5:00    | PCE            | 0.7  | <b>4.4</b>                          |
| IA-8        | Small southeast corner breakroom and bathroom            | IA          | Yes             | 3/22/2018 5:11    | Vinyl Chloride | 1.3  | 1.3 U                               |
| IA-8        | Small southeast corner breakroom and bathroom            | IA          | Yes             | 3/22/2018 5:11    | 1,1-DCE        | 0.4  | 0.4 U                               |
| IA-8        | Small southeast corner breakroom and bathroom            | IA          | Yes             | 3/22/2018 5:11    | trans-1,2-DCE  | 0.4  | 0.4 U                               |
| IA-8        | Small southeast corner breakroom and bathroom            | IA          | Yes             | 3/22/2018 5:11    | cis-1,2,DCE    | 0.4  | 0.4 U                               |
| IA-8        | Small southeast corner breakroom and bathroom            | IA          | Yes             | 3/22/2018 5:11    | TCE            | 0.6  | 0.55 U                              |
| IA-8        | Small southeast corner breakroom and bathroom            | IA          | Yes             | 3/22/2018 5:11    | PCE            | 0.7  | <b>3.6</b>                          |
| IA-9        | Warehouse (NW)   | IA          | Yes             | 3/22/2018 5:22    | Vinyl Chloride | 1.3  | 1.3 U                               |
| IA-9        | Warehouse (NW)   | IA          | Yes             | 3/22/2018 5:22    | 1,1-DCE        | 0.4  | 0.4 U                               |
| IA-9        | Warehouse (NW)   | IA          | Yes             | 3/22/2018 5:22    | trans-1,2-DCE  | 0.4  | 0.4 U                               |
| IA-9        | Warehouse (NW)   | IA          | Yes             | 3/22/2018 5:22    | cis-1,2,DCE    | 0.4  | 0.4 U                               |
| IA-9        | Warehouse (NW)   | IA          | Yes             | 3/22/2018 5:22    | TCE            | 0.6  | 0.55 U                              |
| IA-9        | Warehouse (NW)   | IA          | Yes             | 3/22/2018 5:22    | PCE            | 0.7  | <b>8.7</b>                          |
| IA-10       | Warehouse (NE)   | IA          | Yes             | 3/22/2018 5:32    | Vinyl Chloride | 1.3  | 1.3 U                               |
| IA-10       | Warehouse (NE)   | IA          | Yes             | 3/22/2018 5:32    | 1,1-DCE        | 0.4  | 0.4 U                               |
| IA-10       | Warehouse (NE)   | IA          | Yes             | 3/22/2018 5:32    | trans-1,2-DCE  | 0.4  | 0.4 U                               |
| IA-10       | Warehouse (NE)   | IA          | Yes             | 3/22/2018 5:32    | cis-1,2,DCE    | 0.4  | 0.4 U                               |
| IA-10       | Warehouse (NE)   | IA          | Yes             | 3/22/2018 5:32    | TCE            | 0.6  | 0.55 U                              |
| IA-10       | Warehouse (NE)   | IA          | Yes             | 3/22/2018 5:32    | PCE            | 0.7  | <b>3.1</b>                          |
| IA-11       | Central interior office, adjacent to computer parts room | IA          | Yes             | 3/22/2018 5:53    | Vinyl Chloride | 1.3  | 1.3 U                               |
| IA-11       | Central interior office, adjacent to computer parts room | IA          | Yes             | 3/22/2018 5:53    | 1,1-DCE        | 0.4  | 0.4 U                               |
| IA-11       | Central interior office, adjacent to computer parts room | IA          | Yes             | 3/22/2018 5:53    | trans-1,2-DCE  | 0.4  | 0.4 U                               |
| IA-11       | Central interior office, adjacent to computer parts room | IA          | Yes             | 3/22/2018 5:53    | cis-1,2,DCE    | 0.4  | 0.4 U                               |
| IA-11       | Central interior office, adjacent to computer parts room | IA          | Yes             | 3/22/2018 5:53    | TCE            | 0.6  | 0.55 U                              |
| IA-11       | Central interior office, adjacent to computer parts room | IA          | Yes             | 3/22/2018 5:53    | PCE            | 0.7  | <b>5.5</b>                          |
| IA-12       | Central main kitchen/breakroom                           | IA          | Yes             | 3/22/2018 6:03    | Vinyl Chloride | 1.3  | 1.3 U                               |
| IA-12       | Central main kitchen/breakroom                           | IA          | Yes             | 3/22/2018 6:03    | 1,1-DCE        | 0.4  | 0.4 U                               |
| IA-12       | Central main kitchen/breakroom                           | IA          | Yes             | 3/22/2018 6:03    | trans-1,2-DCE  | 0.4  | 0.4 U                               |
| IA-12       | Central main kitchen/breakroom                           | IA          | Yes             | 3/22/2018 6:03    | cis-1,2,DCE    | 0.4  | 0.4 U                               |
| IA-12       | Central main kitchen/breakroom                           | IA          | Yes             | 3/22/2018 6:03    | TCE            | 0.6  | 0.55 U                              |
| IA-12       | Central main kitchen/breakroom                           | IA          | Yes             | 3/22/2018 6:03    | PCE            | 0.7  | <b>1.9</b>                          |
| IA-13       | Exterior northwestern conference room                    | IA          | Yes             | 3/22/2018 6:14    | Vinyl Chloride | 1.3  | 1.3 U                               |
| IA-13       | Exterior northwestern conference room                    | IA          | Yes             | 3/22/2018 6:14    | 1,1-DCE        | 0.4  | 0.4 U                               |
| IA-13       | Exterior northwestern conference room                    | IA          | Yes             | 3/22/2018 6:14    | trans-1,2-DCE  | 0.4  | 0.4 U                               |
| IA-13       | Exterior northwestern conference room                    | IA          | Yes             | 3/22/2018 6:14    | cis-1,2,DCE    | 0.4  | 0.4 U                               |



Table 1. HAPSITE Analytical Results for Building 505

Hanging Rock Facility, Ironton, Ohio

| Sample Name | Sample Location  | Sample Type | Breathing Zone? | Date/Time Sampled | Compound       | Reporting Limit (µg/m <sup>3</sup> ) | Result (µg/m <sup>3</sup> ) |
|-------------|--|-------------|-----------------|-------------------|----------------|--------------------------------------|-----------------------------|
| IA-13       | Exterior northwestern conference room                            | IA          | Yes             | 3/22/2018 6:14    | TCE            | 0.6                                  | 0.55 U                      |
| IA-13       | Exterior northwestern conference room                            | IA          | Yes             | 3/22/2018 6:14    | PCE            | 0.7                                  | <b>1.4</b>                  |
| IA-14       | Central exterior south office                                    | IA          | Yes             | 3/22/2018 6:28    | Vinyl Chloride | 1.3                                  | 1.3 U                       |
| IA-14       | Central exterior south office                                    | IA          | Yes             | 3/22/2018 6:28    | 1,1-DCE        | 0.4                                  | 0.4 U                       |
| IA-14       | Central exterior south office                                    | IA          | Yes             | 3/22/2018 6:28    | trans-1,2-DCE  | 0.4                                  | 0.4 U                       |
| IA-14       | Central exterior south office                                    | IA          | Yes             | 3/22/2018 6:28    | cis-1,2,DCE    | 0.4                                  | 0.4 U                       |
| IA-14       | Central exterior south office                                    | IA          | Yes             | 3/22/2018 6:28    | TCE            | 0.6                                  | 0.55 U                      |
| IA-14       | Central exterior south office                                    | IA          | Yes             | 3/22/2018 6:28    | PCE            | 0.7                                  | <b>3.5</b>                  |
| IA-15       | Central exterior small electrical room                           | IA          | Yes             | 3/22/2018 6:39    | Vinyl Chloride | 1.3                                  | 1.3 U                       |
| IA-15       | Central exterior small electrical room                           | IA          | Yes             | 3/22/2018 6:39    | 1,1-DCE        | 0.4                                  | 0.4 U                       |
| IA-15       | Central exterior small electrical room                           | IA          | Yes             | 3/22/2018 6:39    | trans-1,2-DCE  | 0.4                                  | 0.4 U                       |
| IA-15       | Central exterior small electrical room                           | IA          | Yes             | 3/22/2018 6:39    | cis-1,2,DCE    | 0.4                                  | 0.4 U                       |
| IA-15       | Central exterior small electrical room                           | IA          | Yes             | 3/22/2018 6:39    | TCE            | 0.6                                  | 0.55 U                      |
| IA-15       | Central exterior small electrical room                           | IA          | Yes             | 3/22/2018 6:39    | PCE            | 0.7                                  | <b>1.4</b>                  |
| OA-1        | Outside, south of building                                       | OA          | Yes             | 3/22/2018 6:48    | Vinyl Chloride | 1.3                                  | 1.3 U                       |
| OA-1        | Outside, south of building                                       | OA          | Yes             | 3/22/2018 6:48    | 1,1-DCE        | 0.4                                  | 0.4 U                       |
| OA-1        | Outside, south of building                                       | OA          | Yes             | 3/22/2018 6:48    | trans-1,2-DCE  | 0.4                                  | 0.4 U                       |
| OA-1        | Outside, south of building                                       | OA          | Yes             | 3/22/2018 6:48    | cis-1,2,DCE    | 0.4                                  | 0.4 U                       |
| OA-1        | Outside, south of building                                       | OA          | Yes             | 3/22/2018 6:48    | TCE            | 0.6                                  | 0.55 U                      |
| OA-1        | Outside, south of building                                       | OA          | Yes             | 3/22/2018 6:48    | PCE            | 0.7                                  | 0.69 U                      |
| PP-1        | Crack in slab, southwest corner storage room                     | PP          | No              | 3/22/2018 3:56    | Vinyl Chloride | 1.3                                  | 1.3 U                       |
| PP-1        | Crack in slab, southwest corner storage room                     | PP          | No              | 3/22/2018 3:56    | 1,1-DCE        | 0.4                                  | <b>0.84</b>                 |
| PP-1        | Crack in slab, southwest corner storage room                     | PP          | No              | 3/22/2018 3:56    | trans-1,2-DCE  | 0.4                                  | 0.4 U                       |
| PP-1        | Crack in slab, southwest corner storage room                     | PP          | No              | 3/22/2018 3:56    | cis-1,2,DCE    | 0.4                                  | <b>35 E</b>                 |
| PP-1        | Crack in slab, southwest corner storage room                     | PP          | No              | 3/22/2018 3:56    | TCE            | 0.6                                  | <b>140 E</b>                |
| PP-1        | Crack in slab, southwest corner storage room                     | PP          | No              | 3/22/2018 3:56    | PCE            | 0.7                                  | <b>1800 E</b>               |
| PP-2        | Under raised floor, central interior computer parts storage room | PP          | No              | 3/22/2018 4:42    | Vinyl Chloride | 1.3                                  | 1.3 U                       |
| PP-2        | Under raised floor, central interior computer parts storage room | PP          | No              | 3/22/2018 4:42    | 1,1-DCE        | 0.4                                  | 0.4 U                       |
| PP-2        | Under raised floor, central interior computer parts storage room | PP          | No              | 3/22/2018 4:42    | trans-1,2-DCE  | 0.4                                  | 0.4 U                       |
| PP-2        | Under raised floor, central interior computer parts storage room | PP          | No              | 3/22/2018 4:42    | cis-1,2,DCE    | 0.4                                  | 0.4 U                       |
| PP-2        | Under raised floor, central interior computer parts storage room | PP          | No              | 3/22/2018 4:42    | TCE            | 0.6                                  | <b>5.6</b>                  |
| PP-2        | Under raised floor, central interior computer parts storage room | PP          | No              | 3/22/2018 4:42    | PCE            | 0.7                                  | <b>130</b>                  |
| PP-3        | Crack in slab, central interior computer parts storage room      | PP          | No              | 3/22/2018 5:43    | Vinyl Chloride | 1.3                                  | 1.3 U                       |
| PP-3        | Crack in slab, central interior computer parts storage room      | PP          | No              | 3/22/2018 5:43    | 1,1-DCE        | 0.4                                  | 0.4 U                       |
| PP-3        | Crack in slab, central interior computer parts storage room      | PP          | No              | 3/22/2018 5:43    | trans-1,2-DCE  | 0.4                                  | 0.4 U                       |
| PP-3        | Crack in slab, central interior computer parts storage room      | PP          | No              | 3/22/2018 5:43    | cis-1,2,DCE    | 0.4                                  | 0.4 U                       |
| PP-3        | Crack in slab, central interior computer parts storage room      | PP          | No              | 3/22/2018 5:43    | TCE            | 0.6                                  | <b>6.7</b>                  |
| PP-3        | Crack in slab, central interior computer parts storage room      | PP          | No              | 3/22/2018 5:43    | PCE            | 0.7                                  | <b>770 E</b>                |

Table 1. HAPSITE Analytical Results for Building 505

*Hanging Rock Facility, Ironton, Ohio*

| Sample Name | Sample Location | Sample Type | Breathing Zone? | Date/Time Sampled | Compound | Reporting Limit (µg/m <sup>3</sup> ) | Result (µg/m <sup>3</sup> ) |
|-------------|-----------------|-------------|-----------------|-------------------|----------|--------------------------------------|-----------------------------|
|-------------|-----------------|-------------|-----------------|-------------------|----------|--------------------------------------|-----------------------------|

Notes:

µg/m<sup>3</sup> = micrograms per cubic meter

**bold text** indicates a detection

DCE = dichloroethylene

E = Exceeded the HAPSITE calibration range

IA = Indoor air

OA = Outdoor air

PCE = tetrachloroethylene

PP = Potential pathway

TCE = trichloroethylene

U = Not detected

**Table 2. Interim Measures Performance Monitoring Indoor Air Sample Collection Timeframes**

*Hanging Rock Facility, Ironton, OH*

| <b>Performance Monitoring Indoor Air Sampling Event</b> | <b>Timeframe – Starts from April 5, 2018 – Completing the Interim Measure Actions</b> | <b>2018 Sample by Date</b> |
|---|---|----------------------------|
| Initial Post Sampling                                   | Within 10 calendar days   | April 15                   |
| 1-month Post Sampling                                   | Within 30 calendar days   | May 5                      |
| 2.5-month Post Sampling                                 | Within 10 weeks   | June 14                    |
| 4-month Post Sampling                                   | Within 20 weeks   | August 23                  |
| 8-month Post Sampling                                   | Within 36 weeks   | December 13                |

# Attachment 1

Hanging Rock Facility - Building 505  
Photolog Interim Mitigation Actions

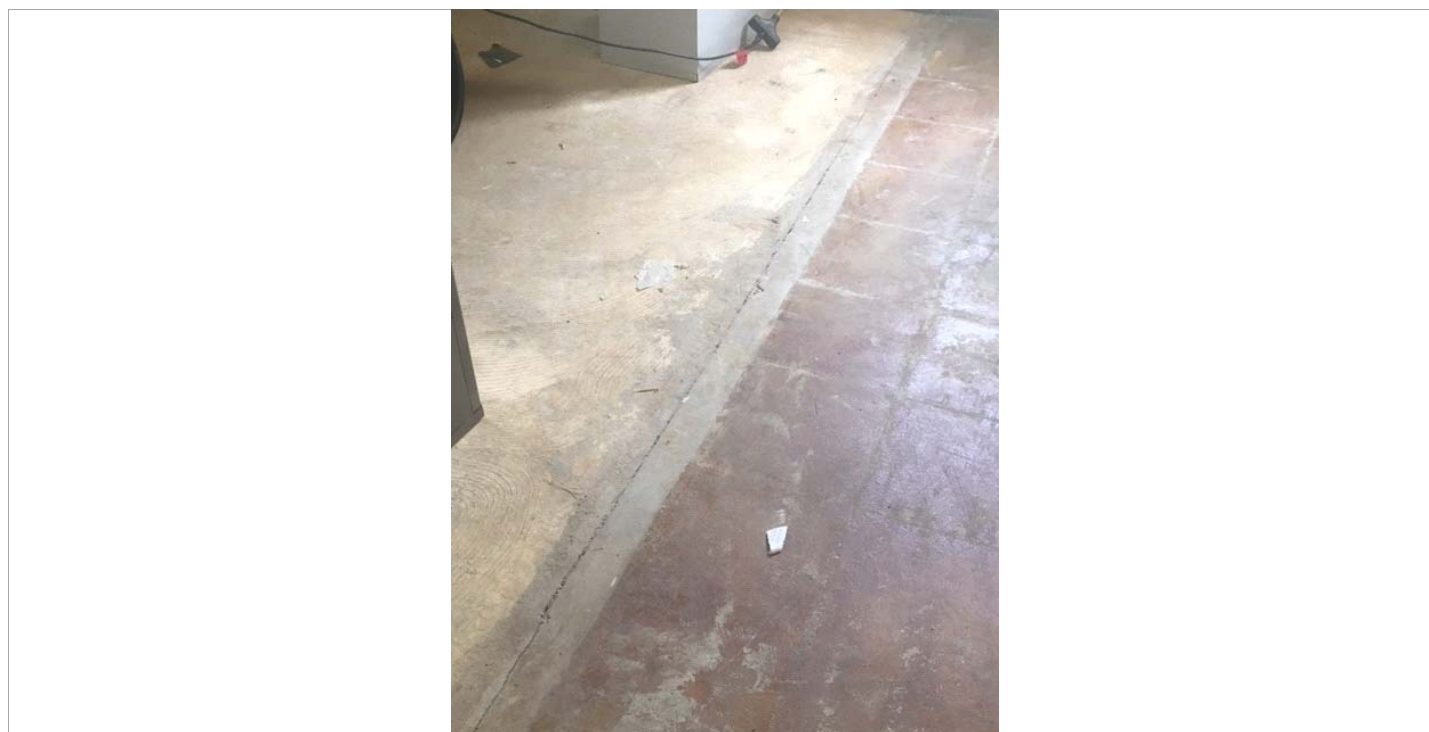


|                     |              |                    |           |                        |  |
|---------------------|--------------|--------------------|-----------|------------------------|--|
| <b>Photo 1</b>      | Door Notices | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> |  |
| <b>Description:</b> | Door notices |                    |           |                        |  |
|                     |              |                    |           |                        |  |

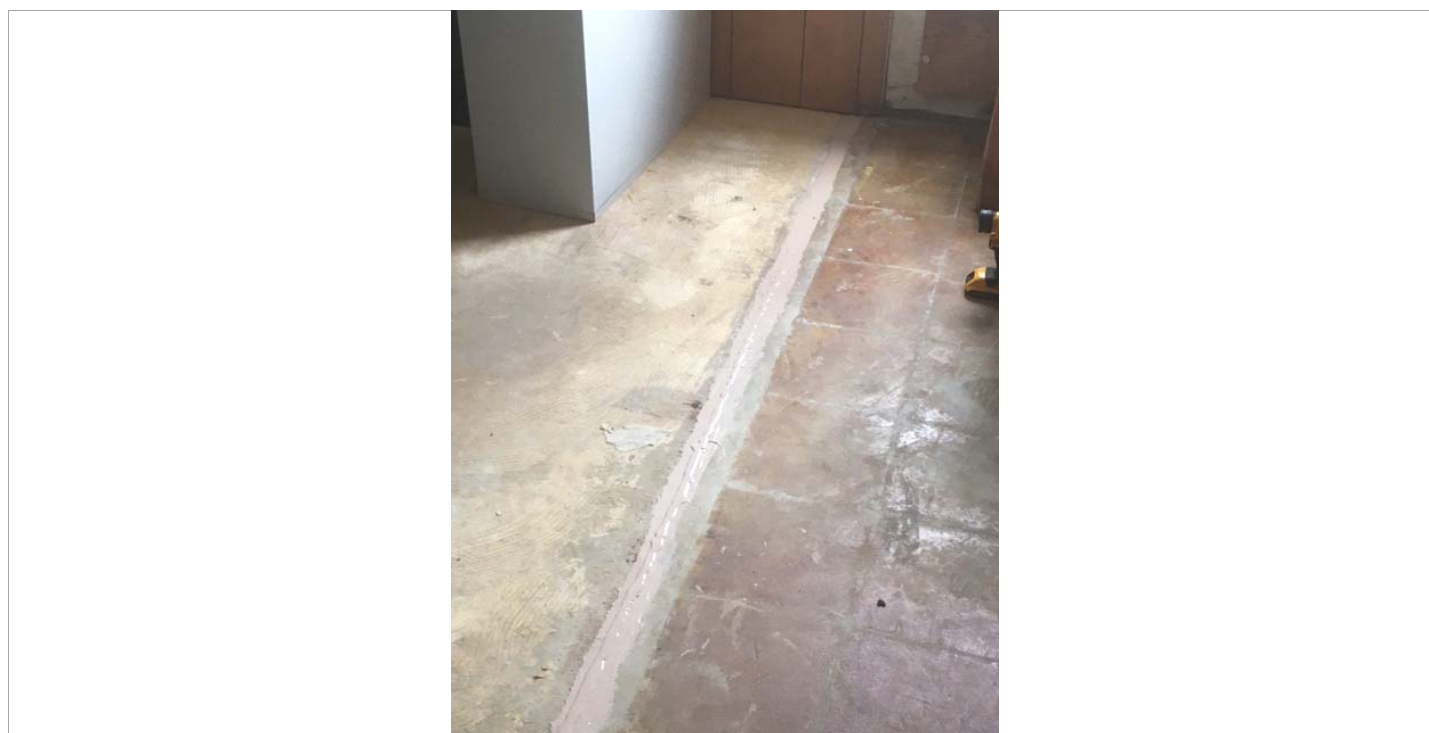


|                     |                     |                    |           |                        |  |
|---------------------|---------------------|--------------------|-----------|------------------------|--|
| <b>Photo 2:</b>     | Notice Posting      | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> |  |
| <b>Description:</b> | Door notice closeup |                    |           |                        |  |
|                     |                     |                    |           |                        |  |

Hanging Rock Facility - Building 505  
Photolog Interim Mitigation Actions



|                     |  |                    |          |                        |  |
|---------------------|--|--------------------|----------|------------------------|--|
| <b>Photo 3:</b>     | Before   | <b>Date Taken:</b> | 4/4/2018 | <b>View Direction:</b> |  |
| <b>Description:</b> | Crack where wall was removed to open up southwest corner room-Before |                    |          |                        |  |
|                     |  |                    |          |                        |  |

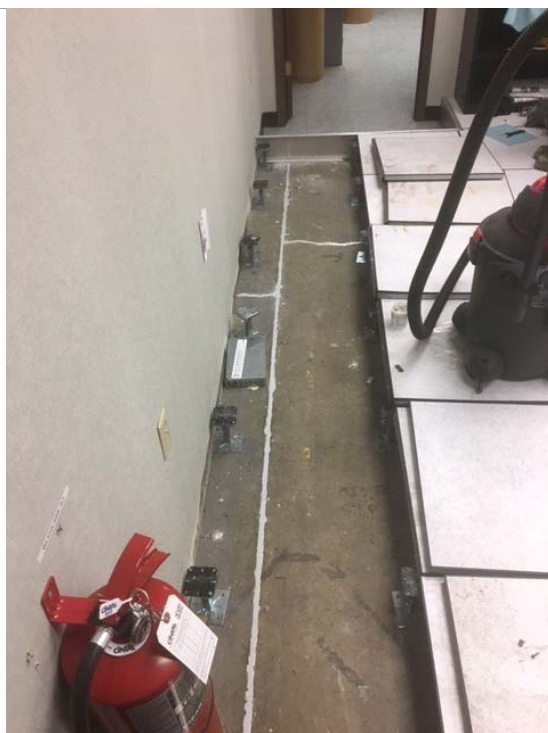


|                     |   |                    |          |                        |  |
|---------------------|---|--------------------|----------|------------------------|--|
| <b>Photo 4:</b>     | After sealing   | <b>Date Taken:</b> | 4/4/2018 | <b>View Direction:</b> |  |
| <b>Description:</b> | Crack where wall was removed to open up southwest corner room-After |                    |          |                        |  |
|                     |   |                    |          |                        |  |

Hanging Rock Facility - Building 505  
Photolog Interim Mitigation Actions



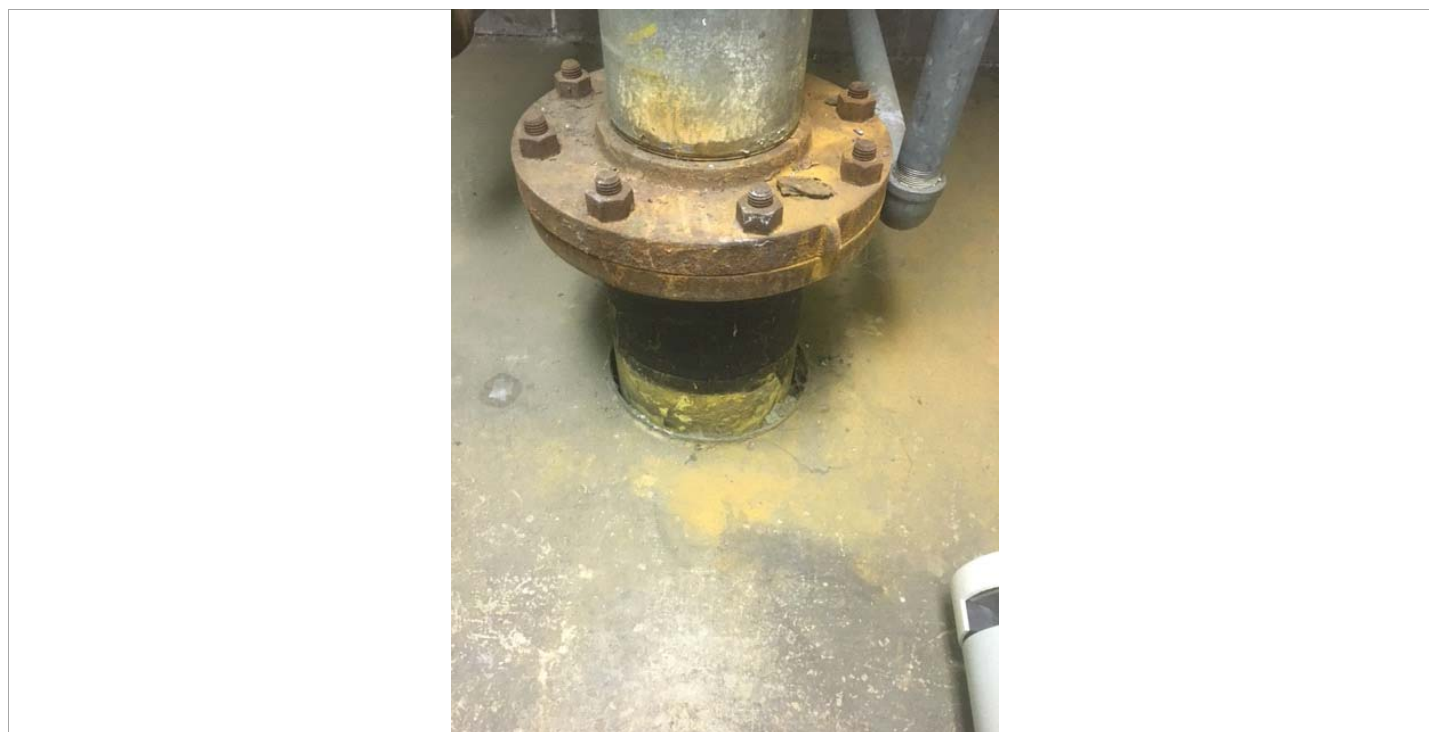
|                     |   |                    |          |                        |  |
|---------------------|---|--------------------|----------|------------------------|--|
| <b>Photo 5:</b>     | Before  | <b>Date Taken:</b> | 4/4/2018 | <b>View Direction:</b> |  |
| <b>Description:</b> | Crack below raised floor in interior computer parts room-Before |                    |          |                        |  |
|                     |   |                    |          |                        |  |



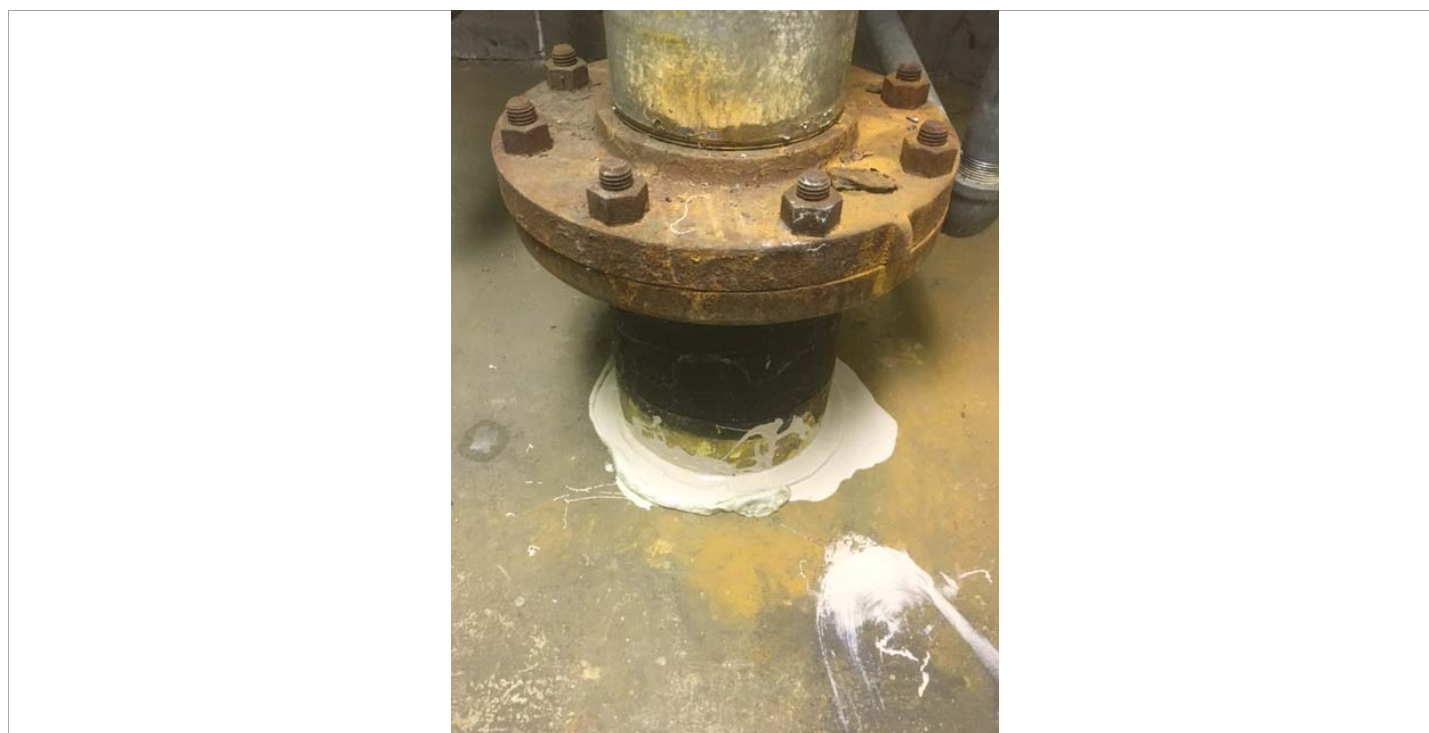
|                     |  |                    |          |                        |  |
|---------------------|--|--------------------|----------|------------------------|--|
| <b>Photo 6:</b>     | After Sealing  | <b>Date Taken:</b> | 4/4/2018 | <b>View Direction:</b> |  |
| <b>Description:</b> | Crack below raised floor in interior computer parts room-After |                    |          |                        |  |
|                     |  |                    |          |                        |  |



Hanging Rock Facility - Building 505  
Photolog Interim Mitigation Actions



|                     |                                |                    |          |                        |  |
|---------------------|--------------------------------|--------------------|----------|------------------------|--|
| <b>Photo 7:</b>     | Before                         | <b>Date Taken:</b> | 4/4/2018 | <b>View Direction:</b> |  |
| <b>Description:</b> | Fire water riser pipe - before |                    |          |                        |  |
|                     |                                |                    |          |                        |  |



|                     |                               |                    |          |                        |  |
|---------------------|-------------------------------|--------------------|----------|------------------------|--|
| <b>Photo 8:</b>     | After Sealing                 | <b>Date Taken:</b> | 4/4/2018 | <b>View Direction:</b> |  |
| <b>Description:</b> | Fire water riser pipe - after |                    |          |                        |  |
|                     |                               |                    |          |                        |  |



Hanging Rock Facility - Building 505  
Photolog Interim Mitigation Actions



|                     |  |                    |           |                        |  |
|---------------------|--|--------------------|-----------|------------------------|--|
| <b>Photo 9:</b>     | Chemical Use   | <b>Date Taken:</b> | 3/23/2018 | <b>View Direction:</b> |  |
| <b>Description:</b> | Interior computer prats room aerosol can, CRC Heavy Duty Degreaser |                    |           |                        |  |
|                     |  |                    |           |                        |  |

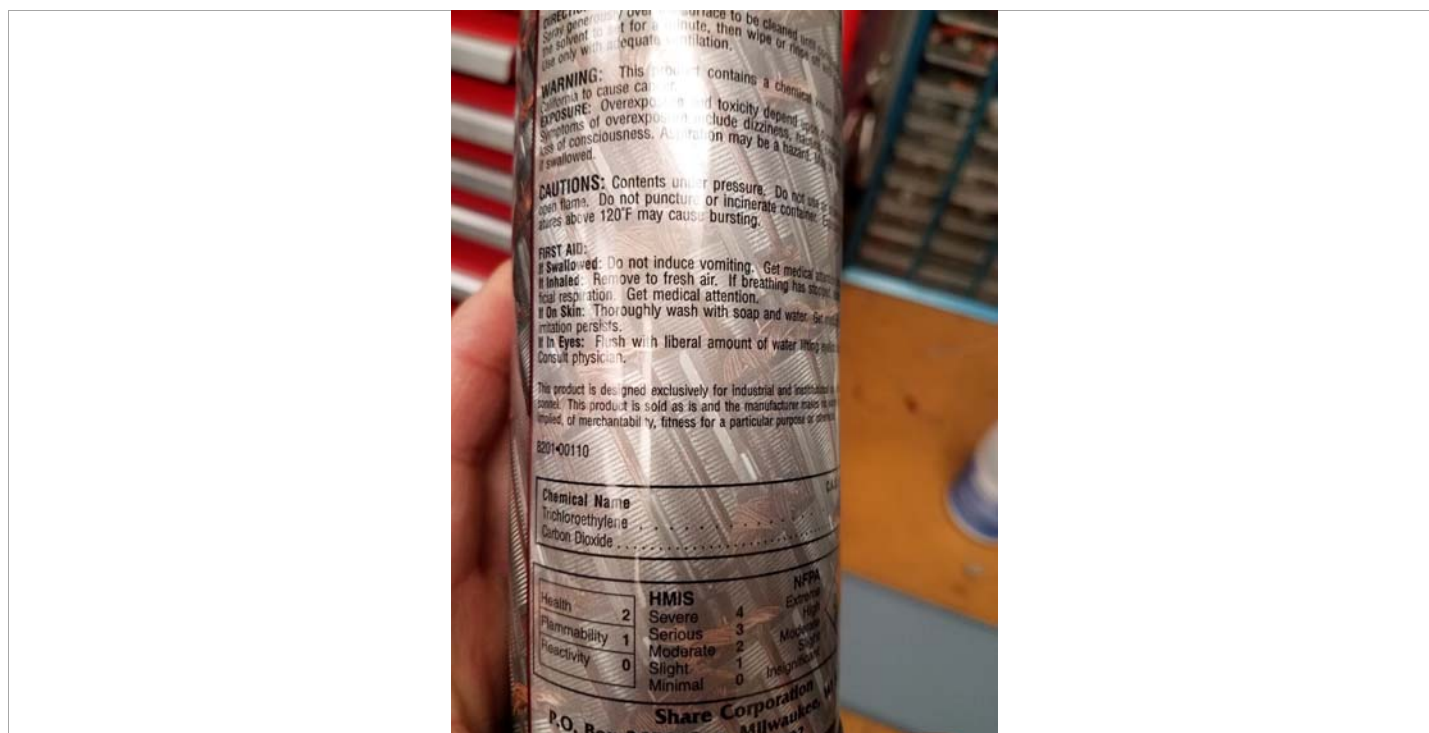


|                     |  |                    |           |                        |  |
|---------------------|--|--------------------|-----------|------------------------|--|
| <b>Photo 10:</b>    | Chemical Use                           | <b>Date Taken:</b> | 3/23/2018 | <b>View Direction:</b> |  |
| <b>Description:</b> | CRC Heavy Duty Degreaser = PCE and TCE |                    |           |                        |  |
|                     |  |                    |           |                        |  |

Hanging Rock Facility - Building 505  
Photolog Interim Mitigation Actions



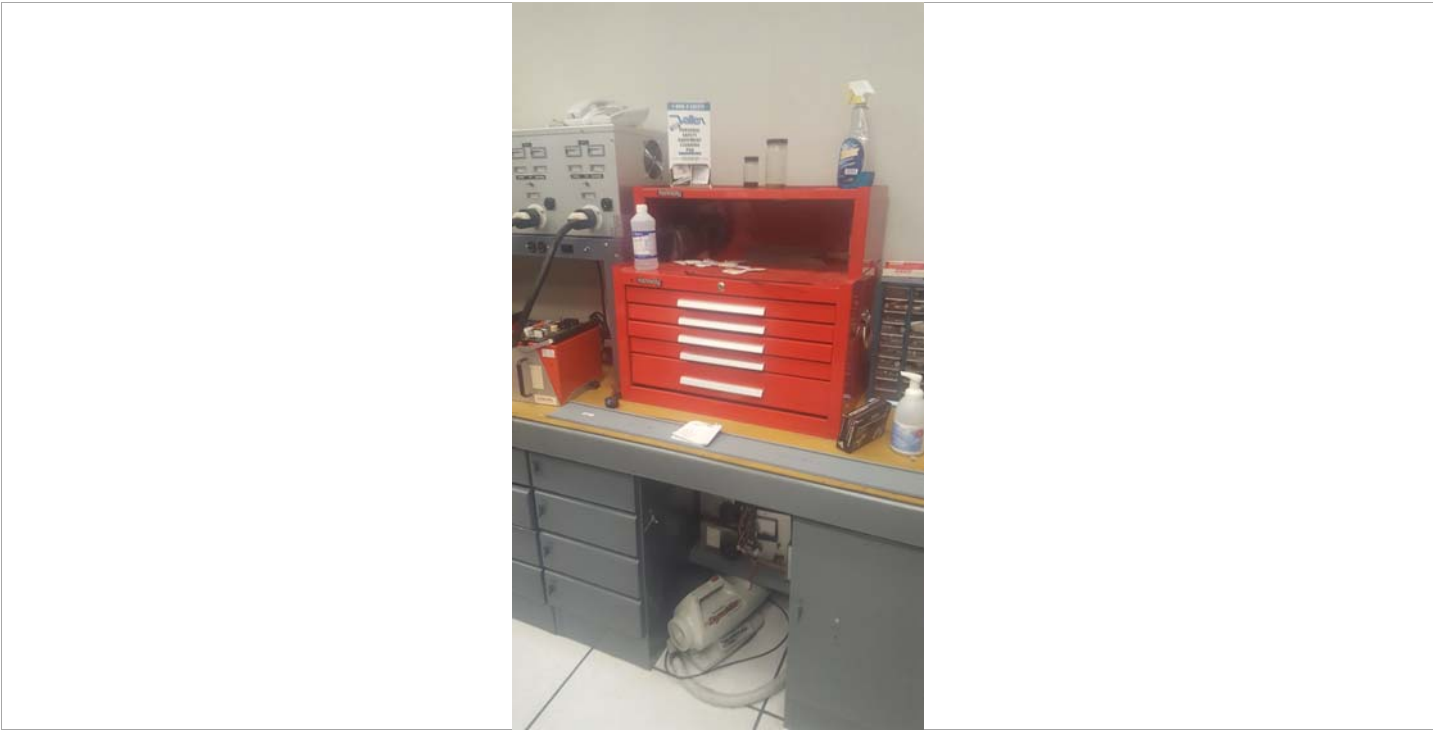
|                     |  |                    |           |                        |  |
|---------------------|--|--------------------|-----------|------------------------|--|
| <b>Photo 11:</b>    | Chemical Use   | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> |  |
| <b>Description:</b> | Interior computer parts room aerosol can, Share Corporation Non-Flammable Safety Solvent |                    |           |                        |  |



|                     |  |                    |           |                        |  |
|---------------------|--|--------------------|-----------|------------------------|--|
| <b>Photo 12:</b>    | Chemical Use   | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> |  |
| <b>Description:</b> | Share Corporation Non-Flammable Safety Solvent = TCE |                    |           |                        |  |



|              |   |             |           |                 |  |
|--------------|---|-------------|-----------|-----------------|--|
| Photo 13:    | Chemical Use-Before   | Date Taken: | 3/22/2018 | View Direction: |  |
| Description: | Interior Computer Parts Room, spray can storage and use area - Before |             |           |                 |  |

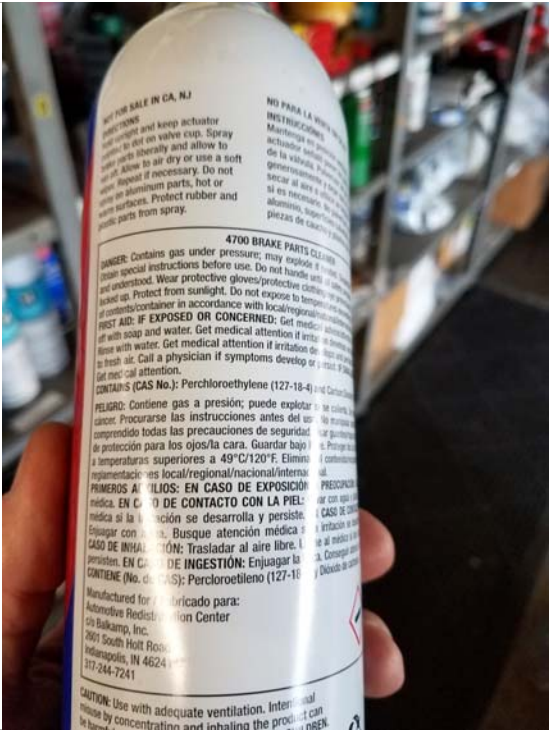


|              |  |             |           |                 |  |
|--------------|--|-------------|-----------|-----------------|--|
| Photo 14:    | Chemical Use-After   | Date Taken: | 4/12/2018 | View Direction: |  |
| Description: | Interior Computer Parts Room, spray can storage and use area - After |             |           |                 |  |





|              |   |             |           |                 |  |
|--------------|---|-------------|-----------|-----------------|--|
| Photo 15:    | Chemical Use                              | Date Taken: | 3/22/2018 | View Direction: |  |
| Description: | Warehouse (SW), Mac's Brake Parts Cleaner |             |           |                 |  |
|              |   |             |           |                 |  |



|              |                                 |             |           |                 |  |
|--------------|---------------------------------|-------------|-----------|-----------------|--|
| Photo 16:    | Chemical Use                    | Date Taken: | 3/22/2018 | View Direction: |  |
| Description: | Mac's Brake Parts Cleaner = PCE |             |           |                 |  |
|              |                                 |             |           |                 |  |

Hanging Rock Facility- Building 505  
Photolog Interim Mitigation Actions



|                     |  |                    |           |                        |  |
|---------------------|--|--------------------|-----------|------------------------|--|
| <b>Photo 17:</b>    | Chemical Use                           | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> |  |
| <b>Description:</b> | Warehouse (SW), Chesterton 273 Cleaner |                    |           |                        |  |
|                     |  |                    |           |                        |  |



|                     |                              |                    |           |                        |  |
|---------------------|------------------------------|--------------------|-----------|------------------------|--|
| <b>Photo 18:</b>    | Chemical Use                 | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> |  |
| <b>Description:</b> | Chesterton 273 Cleaner = PCE |                    |           |                        |  |
|                     |                              |                    |           |                        |  |

Hanging Rock Facility- Building 505  
Photolog Interim Mitigation Actions

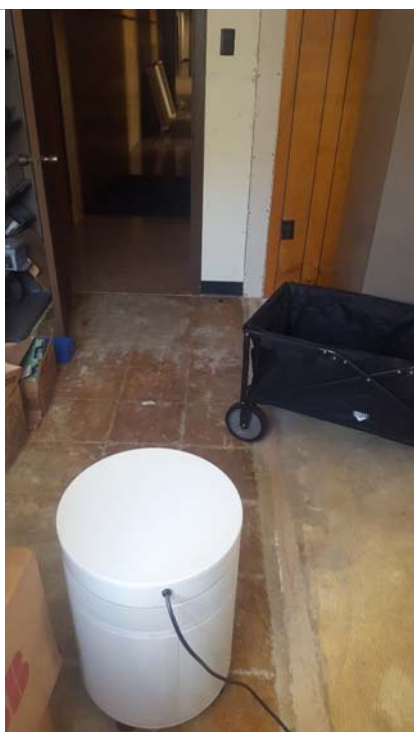


|              |                            |             |           |                 |  |
|--------------|----------------------------|-------------|-----------|-----------------|--|
| Photo 19:    | Warehouse storage          | Date Taken: | 4/12/2018 | View Direction: |  |
| Description: | Warehouse shelving storage |             |           |                 |  |
|              |                            |             |           |                 |  |

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|  |  |  |  |  |  |

Hanging Rock Facility - Building 505  
Photolog Interim Mitigation Actions



|                     |                                      |                    |           |                        |  |
|---------------------|--------------------------------------|--------------------|-----------|------------------------|--|
| <b>Photo 20:</b>    | APU Locations                        | <b>Date Taken:</b> | 4/12/2018 | <b>View Direction:</b> |  |
| <b>Description:</b> | APU in southwest corner storage room |                    |           |                        |  |
|                     |                                      |                    |           |                        |  |



|                     |   |                    |           |                        |  |
|---------------------|---|--------------------|-----------|------------------------|--|
| <b>Photo 21:</b>    | APU Locations   | <b>Date Taken:</b> | 4/12/2018 | <b>View Direction:</b> |  |
| <b>Description:</b> | APU in interior computer parts storage room with raised floor |                    |           |                        |  |
|                     |   |                    |           |                        |  |





|                     |   |                    |           |                        |      |
|---------------------|---|--------------------|-----------|------------------------|------|
| <b>Photo 22:</b>    | HVAC Survey   | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> | East |
| <b>Description:</b> | SW outside building corner showing through-wall air conditioner units |                    |           |                        |      |
|                     |   |                    |           |                        |      |



|                     |   |                    |           |                        |      |
|---------------------|---|--------------------|-----------|------------------------|------|
| <b>Photo 23:</b>    | HVAC Survey   | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> | East |
| <b>Description:</b> | SE outside building corner, showing through-wall air units, storeroom entry door and garage door, and SE corner breakroom through-wall unit |                    |           |                        |      |
|                     |   |                    |           |                        |      |



Hanging Rock Facility - Building 505  
Photolog HVAC



|                     |  |                    |           |                        |      |
|---------------------|--|--------------------|-----------|------------------------|------|
| <b>Photo 24:</b>    | HVAC Survey                                | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> | West |
| <b>Description:</b> | Gas-fired unit heater in eastern storeroom |                    |           |                        |      |
|                     |  |                    |           |                        |      |



|                     |   |                    |           |                        |      |
|---------------------|---|--------------------|-----------|------------------------|------|
| <b>Photo 25:</b>    | HVAC Survey                                 | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> | West |
| <b>Description:</b> | Ridge vent full length of eastern storeroom |                    |           |                        |      |
|                     |   |                    |           |                        |      |

Hanging Rock Facility - Building 505  
Photolog HVAC



|                     |   |                    |           |                        |      |
|---------------------|---|--------------------|-----------|------------------------|------|
| <b>Photo 26:</b>    | HVAC Survey                               | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> | West |
| <b>Description:</b> | Electric unit heater in eastern storeroom |                    |           |                        |      |
|                     |   |                    |           |                        |      |



|                     |   |                    |           |                        |           |
|---------------------|---|--------------------|-----------|------------------------|-----------|
| <b>Photo 27:</b>    | HVAC Survey   | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> | Northeast |
| <b>Description:</b> | Central interior computer parts storage room HVAC ceiling arrangement |                    |           |                        |           |
|                     |   |                    |           |                        |           |





|                     |   |                    |           |                        |      |
|---------------------|---|--------------------|-----------|------------------------|------|
| <b>Photo 28:</b>    | HVAC Survey   | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> | East |
| <b>Description:</b> | Split-system heat pumps in attic serving core areas |                    |           |                        |      |
|                     |   |                    |           |                        |      |



|                     |   |                    |           |                        |       |
|---------------------|---|--------------------|-----------|------------------------|-------|
| <b>Photo 29:</b>    | HVAC Survey   | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> | North |
| <b>Description:</b> | Attic split-system indoor air handling unit, typical unit |                    |           |                        |       |
|                     |   |                    |           |                        |       |



|                     |   |                    |           |                        |      |
|---------------------|---|--------------------|-----------|------------------------|------|
| <b>Photo 30:</b>    | HVAC Survey   | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> | West |
| <b>Description:</b> | South Central Exterior Conference 16 split-system heat pump air handler |                    |           |                        |      |
|                     |   |                    |           |                        |      |



|                     |   |                    |           |                        |       |
|---------------------|---|--------------------|-----------|------------------------|-------|
| <b>Photo 31:</b>    | HVAC Survey                                     | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> | North |
| <b>Description:</b> | Wall thermostat and humdistat serving core area |                    |           |                        |       |
|                     |   |                    |           |                        |       |





|                     |  |                    |           |                        |           |
|---------------------|--|--------------------|-----------|------------------------|-----------|
| <b>Photo 32:</b>    | HVAC Survey  | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> | Northeast |
| <b>Description:</b> | Northwestern exterior conference room served by split-system heat pump |                    |           |                        |           |
|                     |  |                    |           |                        |           |



|                     |  |                    |           |                        |      |
|---------------------|--|--------------------|-----------|------------------------|------|
| <b>Photo 33:</b>    | HVAC Survey  | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> | West |
| <b>Description:</b> | Through-wall air conditioning unit found in exterior rooms |                    |           |                        |      |
|                     |  |                    |           |                        |      |

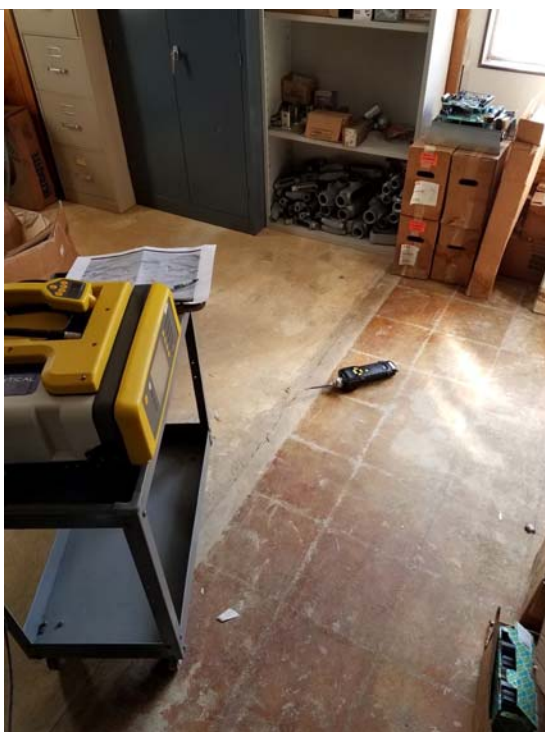




|                     |  |                    |           |                        |      |
|---------------------|--|--------------------|-----------|------------------------|------|
| <b>Photo 34:</b>    | HVAC Survey  | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> | East |
| <b>Description:</b> | Split-system outdoor heat pump units, servicing central building section |                    |           |                        |      |
|                     |  |                    |           |                        |      |



|                     |   |                    |           |                        |      |
|---------------------|---|--------------------|-----------|------------------------|------|
| <b>Photo 35:</b>    | HVAC Survey   | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> | West |
| <b>Description:</b> | Split-system outdoor heat pump units servicing western building section |                    |           |                        |      |
|                     |   |                    |           |                        |      |



|              |   |             |           |                 |            |      |
|--------------|---|-------------|-----------|-----------------|------------|------|
| Photo 36:    | HAPSITE Survey  | Date Taken: | 3/22/2018 | View Direction: | W          |      |
| Description: | Southwest corner storeroom, HAPSITE breathing zone sample collection and PID screening near the floor crack |             |           |                 | HAPSITE ID | PP-1 |
|              |   |             |           |                 |            |      |



|              |   |             |           |                 |            |      |
|--------------|---|-------------|-----------|-----------------|------------|------|
| Photo 37:    | HAPSITE Survey  | Date Taken: | 3/22/2018 | View Direction: | SW         |      |
| Description: | Interior computer parts storage room, HAPSITE breathing zone sample collection near the recently used can of CRC Heavy Duty Degreaser |             |           |                 | HAPSITE ID | IA-5 |
|              |   |             |           |                 |            |      |





|              |  |             |           |                 |            |      |
|--------------|--|-------------|-----------|-----------------|------------|------|
| Photo 38:    | HAPSITE Survey   | Date Taken: | 3/22/2018 | View Direction: |            |      |
| Description: | Interior computer parts storage room, HAPSITE sample collection of air under the raised floor though a cord opening in the floor raised tile |             |           |                 | HAPSITE ID | PP-2 |
|              |  |             |           |                 |            |      |



|                     |  |                    |           |                        |                   |     |
|---------------------|--|--------------------|-----------|------------------------|-------------------|-----|
| <b>Photo 39:</b>    | HAPSITE Survey   | <b>Date Taken:</b> | 3/22/2018 | <b>View Direction:</b> | S                 |     |
| <b>Description:</b> | HAPSITE sample collection adjacent to the fire water pipe riser in a small exterior room |                    |           |                        | <b>HAPSITE ID</b> | IA6 |
|                     |  |                    |           |                        |                   |     |





|              |  |             |           |                 |            |
|--------------|--|-------------|-----------|-----------------|------------|
| Photo 40:    | HAPSITE Survey   | Date Taken: | 3/22/2018 | View Direction: | N          |
| Description: | Warehouse (SW corner) shelving unit HAPSITE sample collection near spray cans with PCE |             |           |                 | HAPSITE ID |
|              |  |             |           |                 | IA-7       |